

# (12) UK Patent Application (19) GB (11) 2 325 333 (13) A

(43) Date of A Publication 18.11.1998

(21) Application No 9709983.2

(22) Date of Filing 17.05.1997

(71) Applicant(s)

**John William Parkes**  
41 Oak Court, Acacia Avenue, Yew Tree Estate,  
WALSALL, WS5 4HB, United Kingdom

(72) Inventor(s)

**John William Parkes**

(74) Agent and/or Address for Service

**John William Parkes**  
41 Oak Court, Acacia Avenue, Yew Tree Estate,  
WALSALL, WS5 4HB, United Kingdom

(51) INT CL<sup>6</sup>  
H01M 2/10

(52) UK CL (Edition P )  
H1B B210C2C

(56) Documents Cited

GB 2313949 A GB 2266405 A GB 1477336 A  
US 4767358 A US 4397920 A US 4142026 A

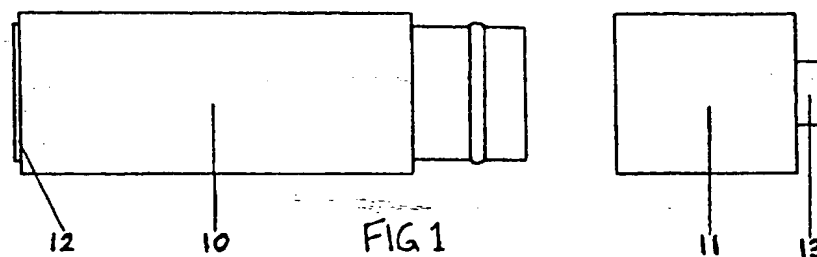
(58) Field of Search

UK CL (Edition P ) H1B  
INT CL<sup>6</sup> H01M 2/00  
On line databases WPI, EDOC, JAPIO

(54) Abstract Title

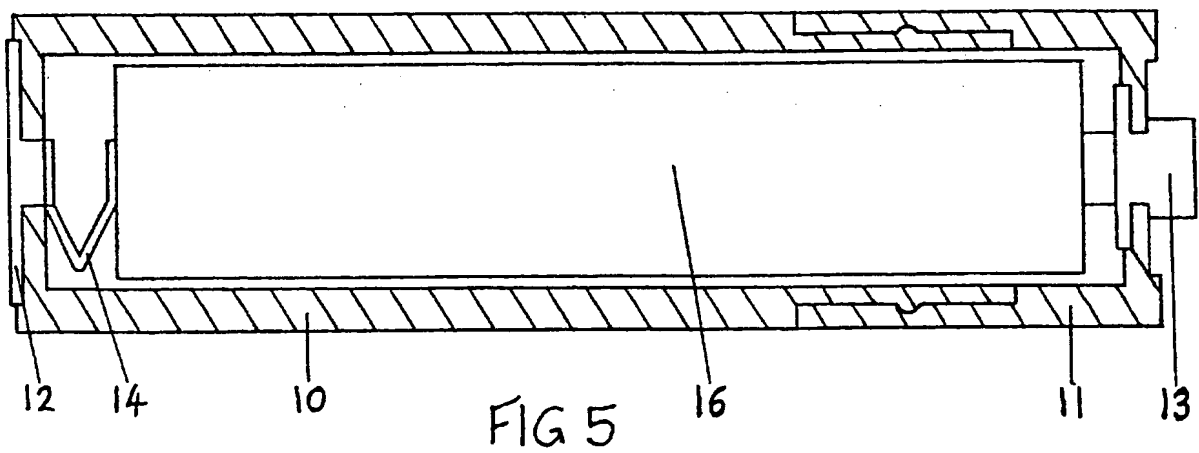
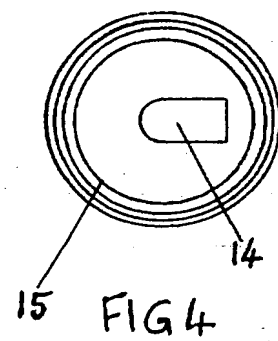
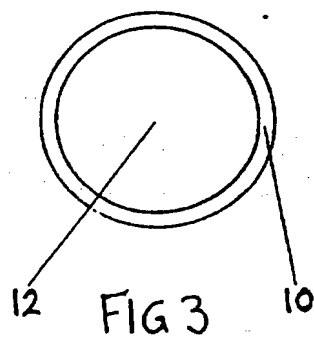
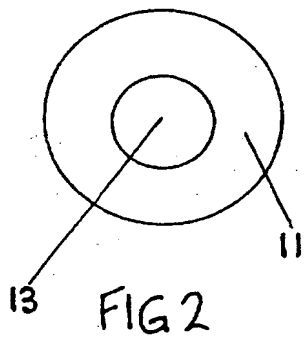
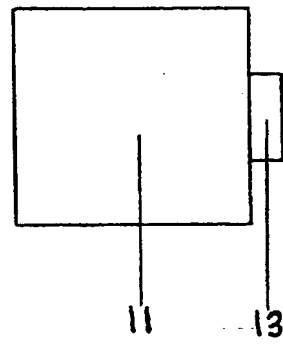
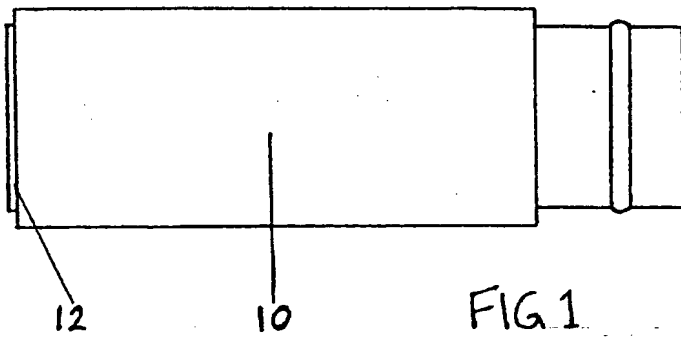
**Battery adaptor**

(57) The adaptor consists of a cell housing, the housing comprising a main cylindrical body 10 and removable end cap 11, electrodes are incorporated at both ends of the adaptor 12 and 13. Once an electric cell of first type is accommodated within the adaptor having the outer dimensions of a cell of second type, the adaptors electrodes then contact the enclosed cells electrodes to utilize the cells electro-motive force. The adaptor with the enclosed cell of a first type can then be used as a cell of a second type in battery compartments designed to accommodate cells of a second type.



GB 2 325 333 A

1/1



## BATTERY ADAPTOR

THIS INVENTION RELATES TO THE USE OF ELECTRIC CELLS

ELECTRIC CELLS ARE WELL KNOWN FOR THEIR USE IN ELECTRICAL / ELECTRONIC EQUIPMENT, BEING USED EITHER SINGULARLY OR IN MULTIPLES TO PRODUCE A REQUIRED VOLTAGE FOR THE OPERATION OF ELECTRICAL/ELECTRONIC PRODUCTS AND EQUIPMENT.

WHEN ITEMS OR EQUIPMENT REQUIRE THE USE OF ELECTRIC CELLS THERE MAY COME A TIME WHEN THE REQUIRED SIZE OF ELECTRIC CELL IS NOT AVAILABLE BUT CELLS OF A SMALLER SIZE ARE AT HAND.

A SPECIFIC EMBODIMENT OF THE INVENTION WILL NOW BE DESCRIBED BY WAY OF EXAMPLE WITH REFERENCE TO THE ACCOMPANYING DRAWING IN WHICH:-

FIGURE 1 SHOWS A SIDE VIEW OF THE ADAPTOR WITH END CAP REMOVED

FIGURE 2 SHOWS THE CLOSED END OF THE ADAPTOR'S CAP

FIGURE 3 SHOWS AN END VIEW OF THE ADAPTOR'S BASE

FIGURE 4 SHOWS AN END VIEW OF THE ADAPTOR WITH CAP REMOVED

FIGURE 5 SHOWS IN CROSS-SECTION THE ADAPTOR WITH CELL IN PLACE

(2)

REFERRING TO THE DRAWINGS THE ADAPTOR CONSISTS OF A CYLINDRICAL HOUSING 10 WHICH ACCOMMODATES THE ELECTRIC CELL TO BE ADAPTED. AT ONE END OF THERE IS PROVIDED A REMOVABLE CAP 11 WHICH IS RESECURED IN PLACE BY A SCREW THREAD OR FRICTION ONCE A CELL TO BE ADAPTED IS INSERTED INTO THE ADAPTOR VIA THE ADAPTOR'S APERTURE 15.

HOUSED WITHIN AND ATTACHED TO THE BASE OF THE ADAPTOR THERE IS PROVIDED AN ELECTRODE 12 WHICH IS CONNECTED TO A METALLIC CONTACT SPRING 14, ALSO AN ELECTRODE 13 IS ATTACHED TO THE CLOSED END OF THE REMOVABLE CAP 11.

ONCE AN ELECTRIC CELL 16 IS ACCOMMODATED WITHIN THE ADAPTOR AS SHOWN IN FIG 5, THE ELECTRODE SITUATED WITHIN THE ADAPTOR'S BASE 12 MAKES CONDUCTIVE CONTACT WITH THE ENCLOSED CELL'S CATHODE VIA THE METALLIC SPRING 14, AND THE ELECTRODE 13 ATTACHED TO THE REMOVABLE CAP MAKES CONDUCTIVE CONTACT WITH THE ANODE OF THE ENCLOSED CELL ON RECONNECTION OF THE CAP 11.

THE ADAPTOR THEN PROVIDES AN ELECTRO-MOTIVE FORCE WHICH IS GENERATED BY THE ENCLOSED CELL 16, THE ADAPTOR CAN THEN BE USED AS IF IT WAS A LARGER SIZED CELL THAN THE ONE IT CONTAINS, WITH THE ADAPTOR'S OUTER DIMENSIONS, AND SIZE AND POSITIONING OF ITS ELECTRODES APPROXIMATING TO A SIZE OF ELECTRIC CELL REQUIRED.

(3)

THE EXAMPLE OF THE ADAPTOR ILLUSTRATED IN THE DRAWINGS SHOW IT WITH THE OUTER DIMENSIONS APPROXIMATING TO A LR6 OR AA SIZE OF ELECTRIC CELL, SO AS TO PRODUCE A MEANS OF UTILIZING A LR03 OR AAA SIZED ELECTRIC CELL FOR USE IN THE BATTERY COMPARTMENTS OF EQUIPMENT THAT REQUIRE LR6 OR AA SIZED ELECTRIC CELLS.

THE ADAPTOR CAN ALSO BE PRODUCED WITH THE OUTER DIMENSIONS OF OTHER SIZES OF ELECTRIC CELL, ALLOWING FOR EXAMPLE AN LR14 OR C SIZED CELL TO BE USED AS IF IT WAS A LR20 OR D SIZED CELL ONCE IT IS ACCOMMODATED WITHIN AN EXAMPLE OF THE ADAPTOR HAVING THE OUTER DIMENSIONS APPROXIMATING TO A LR20 OR D SIZED ELECTRIC CELL.

## CLAIMS

1. An adaptor for receiving an electric cell of a first type, to enable an electric cell of the first type to be mounted within a compartment adapted for an electric cell of a second type of different size, the adaptor comprising a housing in which an electric cell is receivable, the housing being mountable in the compartment in place of the cell of the second size, and the adaptor further comprising a conductive connector for electrically coupling an electrode of an electric cell received in the housing to an electrode of the compartment.
2. An adaptor according to claim 1, comprising conductive connectors for electrically coupling each electrode of an electric cell received in the housing to a respective electrode of the compartment.
3. An adaptor according to claim 1 or 2 in which the housing comprises an aperture in one wall thereof, through which the electric cell is receivable.
4. An adaptor according to claim 3 in which a removable cap is provided to cover the aperture.
5. An adaptor according to claim 4 in which the or at least one of the conductive connectors is provided within the cap.
6. An adaptor according to any preceding claim in which the or each conductive connector is provided within a part of the housing.
7. An adaptor according to any preceding claim in which the or at least one conductive connector is in the form of spring means.
8. An adaptor according to claim 7, wherein the spring means serves, in use, to secure a cell within the housing.
9. An adaptor substantially as described above with reference to the accompanying drawings.
10. Any novel subject matter or combination including novel subject matter disclosed, whether or not within the scope of or related to the same invention as any of the preceding claims.



Application No: GB 9709983.2  
Claims searched: Claims 1-9

Examiner: A.R.Martin  
Date of search: 14 January 1998

## Patents Act 1977 Search Report under Section 17

### Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.P): H1B

Int Cl (Ed.6): H01M 2/00

Other: On line databases WPI, EDOC, JAPIO

### Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
X,E	GB 2313949 A - Wang see Fig 1	Claim 1 at least
X	GB 2266405 A - Bracchi see Fig 2	"
X	GB 1477336 A - Mabuchi see Fig 3	"
X	US 4767358 A - Nullmeyer see Fig 1	"
X	US 4397920 A - Burton see Figs 1 and 4	"
X	US 4142026 A - Macario see Figs 1 -3	"

X Document indicating lack of novelty or inventive step  
Y Document indicating lack of inventive step if combined with one or more other documents of same category.  
& Member of the same patent family

A Document indicating technological background and/or state of the art.  
P Document published on or after the declared priority date but before the filing date of this invention.  
E Patent document published on or after, but with priority date earlier than, the filing date of this application.

THIS PAGE BLANK